

**WHAT IS CLAIMED IS:**

1. A low carbohydrate ready to eat food product comprising a cereal-like core that forms at least about 15% by weight of said food product.
- 5 2. A low carbohydrate ready to eat food product comprising digestible carbohydrate less than or equal to 30% by weight of said food product and at least 15% by volume of identifiable pieces of cereal-like core.
- 10 3. A low carbohydrate ready to eat food product comprising a core of agglomerated identifiable cereal-like pieces, wherein said product comprises at least 15% by weight of said agglomerated cereal-like pieces, and wherein said cereal-like pieces have a median size of at least 2 mm.
- 15 4. The food product of claim 3, wherein said product comprises at least 20% by weight of said agglomerated cereal-like pieces.
5. The food product of claim 4, wherein said product comprises at least 30% by weight of said agglomerated cereal-like pieces.
- 20 6. The food product of claim 5, wherein said product comprises at least 40% by weight of said agglomerated cereal-like pieces.
7. The food product of claim 1, wherein said pieces of cereal-like core are agglomerated.
- 25 8. The food product of claim 1, wherein said pieces of cereal-like core are adhered to each other by a binding agent which is substantially free of simple sugars.
9. The food product of claim 1, wherein said product is in a form selected from the group consisting of a bar, a cookie and a cereal comprising clusters of said pieces of cereal-like core.
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10. The food product of claim 1, wherein each of said pieces of cereal-like core has a median size of at least 2mm.

11. The food product of claim 1, wherein said pieces of cereal-like core comprise pieces or  
5 nuggets derived from a source selected from the group consisting of grains, cereals, legumes, nuts, seeds, fruit, coconut, caramel and chocolate.

12. The food product of claim 1, wherein said pieces of cereal-like core comprise nuggets comprising less than 40% digestible carbohydrate.

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13. The food product of claim 12, wherein said nuggets comprise less than 25% digestible carbohydrate.

14. The food product of claim 13, wherein said nuggets comprise less than 10% digestible  
15 carbohydrate.

15. The food product of claim 1, wherein said said pieces of cereal-like core comprise nuggets comprising more than 60% protein.

20 16. The food product of claim 15, wherein said nuggets comprise more than 75% protein.

17. The food product of claim 16, wherein said nuggets are soya nuggets.

18. The food product of claim 1, wherein said digestible carbohydrate is selected from the  
25 group consisting of simple sugars, starch, and any carbohydrate which may be cleaved under physiological conditions to yield simple sugars.

19. The food product of claim 1, wherein said food product comprises at least 20% by weight of said pieces of cereal-like core.

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20. The food product of claim 19, wherein said food product comprises at least 30% by weight of said pieces of cereal-like core.

21. The food product of claim 20, wherein said food product comprises at least 40% by weight of said pieces of cereal-like core.
22. The food product of claim 21, wherein said food product comprises at least 50% by weight of said pieces of cereal-like core.
23. The food product of claim 22, wherein said food product comprises at least 60% by weight of said pieces of cereal-like core.
24. The food product of claim 8, wherein said binding agent is a protein-based agent.
25. The food product of claim 24, wherein said binding protein-based agent is hydrolyzed gelatin.
26. The food product of claim 1, wherein said product further comprises indigestible carbohydrate.
27. The food product of claim 26, wherein said indigestible carbohydrate is selected from the group consisting of fiber, gum, cellulose, polydextrose, sugar alcohol, fructo-oligosaccharide, inulin, glycerin and fibersol.
28. The food product of claim 1, wherein said product further comprises an additive selected from the group consisting of a vitamin, a mineral and a flavouring agent.
29. The food product of claim 1, wherein said product is in the form of a solid matrix core and further comprises a coating covering at least a part of said matrix core.
30. The food product of claim 29, wherein said coating is selected from the group consisting of chocolate, carob, peanut-based coating, cream-type coating, yogourt-type coating and a flavoured coating.
31. The food product of claim 29, wherein said coating is substantially free of simple sugar.

32. The food product of claim 29, wherein said product is in the form of a bar, and wherein said coating covers a part of a lower portion of said matrix core.
33. The food product of claim 29, wherein said product is in the form of a bar, and wherein  
5 said coating covers a part of an upper portion of said matrix core.
34. The food product of claim 29, wherein said coating covers substantially all of said matrix core.
- 10 35. The food product of claim 1, wherein said product is in the form of a solid matrix core and further comprises an edible layer portion situated above or below said matrix core, wherein said layer portion is substantially free of pieces of cereal-like core.
- 15 36. A layered food product comprising the food product of claim 1, wherein said food product is in the form of a matrix core, wherein said layered food product comprises at least two of said matrix cores and an edible layer portion situated therebetween, wherein said layer portion occupies at least part of the interface between said matrix cores, and wherein said layer portion is substantially free of pieces of cereal-like core.
- 20 37. The food product of claim 35, wherein said layer portion comprises a water-based or fat-based composition selected from the group consisting of caramel, chocolate, peanut, and a flavoured confectionery material.
- 25 38. The food product of claim 35, wherein said layer portion is substantially free of simple sugar.
39. The food product of claim 1, wherein said food product has a water activity of 0.2 to 0.4.
- 30 40. A low carbohydrate ready to eat food product suitable for a controlled carbohydrate diet, wherein said product comprises less than or equal to 30% by weight of digestible carbohydrate and wherein said food product exhibits a texture profile having an average

peak density of at least 1 peak per millimetre penetration depth when analyzed using a *TA.XT Plus* texture analyzer machine following a 45 degree chisel blade test.

41. A low carbohydrate ready to eat food product suitable for a controlled carbohydrate diet,  
5 wherein said product comprises less than or equal to 30% by weight of digestible carbohydrate and wherein said food product exhibits a texture profile having a global maximum at a first depth of penetration and a plurality of isolated local maxima at a respective plurality of second depths of penetration when analyzed using a *TA.XT Plus* texture analyzer machine following either a 45 degree chisel blade test.

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42. The food product of claim 41, wherein said at least one of said second depths of penetration is less than said first depth of penetration.

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43. The food product of claim 41, wherein said at least one of said second depths of penetration is greater than said first depth of penetration.

44. The food product of claim 42, wherein said at least one of said second depths of penetration is greater than said first depth of penetration.

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45. The food product of claim 41, wherein said plurality of said second depths of penetration are less than said first depth of penetration.

46. The food product of claim 41, wherein said plurality of said second depths of penetration are greater than said first depth of penetration.

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47. The food product of claim 45, wherein said plurality of said second depths of penetration are greater than said first depth of penetration.

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48. A low carbohydrate ready to eat food product, comprising at most 30% by weight of digestible carbohydrate, said food product having a thickness and exhibiting a texture profile of force versus depth of penetration when analyzed using a *TA.XT Plus* texture analyzer machine following either a 45 degree chisel blade test, wherein said texture profile is characterized by:

- (d) a global maximum force at a first depth of penetration;
- (e) a global width equal to the difference between a second depth of penetration and a third depth of penetration, the second depth of penetration being less than the first depth of penetration, the third depth of penetration being greater than the first depth of penetration, the second and third depths of penetration corresponding to  
5        respective points on said profile where the force is equal to 50% of said global maximum force, said global width being at least 80% of the thickness of the food product; and
- (f) a plurality of local peaks appearing in a density of at least one per millimeter  
10        penetration depth, each local peak characterized by a respective fourth depth of penetration at which the force exhibits a local maximum and a respective fifth depth of penetration at which the force exhibits a local minimum, wherein the difference between the respective fourth and fifth depths of penetration is between 1% to 25% of said global width, wherein each local peak is further characterized by a respective  
15        local amplitude equal to the difference between the force at the respective fourth depth of penetration and the force at the respective fifth depth of penetration, the respective local amplitude being at least 1% of said global maximum force.

49. The food product of claim 40, wherein said food product comprises a plurality of pieces  
20        of cereal-like core.

50. The food product of claim 49, wherein said pieces of cereal-like core are adhered to each other by a binding agent which is substantially free of simple sugars.

51. The food product of claim 49, wherein said product is in a form selected from the group  
25        consisting of a bar, a cookie and a cereal comprising clusters of said pieces of cereal-like core.

52. The food product of claim 49, wherein each of said pieces of cereal-like core has a  
30        median size of at least 2mm.

53. The food product of claim 49, wherein said pieces of cereal-like core comprise pieces or nuggets derived from a source selected from the group consisting of grains, cereals, legumes, nuts, seeds, fruit, coconut, caramel and chocolate.

5 54. The food product of claim 49, wherein said pieces of cereal-like core comprise nuggets comprising less than 40% digestible carbohydrate.

55. The food product of claim 54, wherein said nuggets comprise less than 25% digestible carbohydrate.

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56. The food product of claim 55, wherein said nuggets comprise less than 10% digestible carbohydrate.

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57. The food product of claim 49, wherein said said pieces of cereal-like core comprise nuggets comprising more than 60% protein.

58. The food product of claim 57, wherein said nuggets comprise more than 75% protein.

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59. The food product of claim 58, wherein said nuggets are soya nuggets.

60. The food product of claim 40, wherein said digestible carbohydrate is selected from the group consisting of simple sugars, starch, and any carbohydrate which may be cleaved under physiological conditions to yield simple sugars.

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61. The food product of claim 49, wherein said food product comprises at least 20% by weight of said pieces of cereal-like core.

62. The food product of claim 61, wherein said food product comprises at least 30% by weight of said pieces of cereal-like core.

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63. The food product of claim 62, wherein said food product comprises at least 40% by weight of said pieces of cereal-like core.

64. The food product of claim 63, wherein said food product comprises at least 50% by weight of said pieces of cereal-like core.
65. The food product of claim 64, wherein said food product comprises at least 60% by weight of said pieces of cereal-like core.
66. The food product of claim 50, wherein said binding agent is a protein-based agent.
67. The food product of claim 66, wherein said binding protein-based agent is hydrolyzed gelatin.
68. The food product of claim 40, wherein said product further comprises indigestible carbohydrate.
69. The food product of claim 68, wherein said indigestible carbohydrate is selected from the group consisting of fiber, gum, cellulose, polydextrose, sugar alcohol, fructo-oligosaccharide, inulin, glycerin and fibersol.
70. The food product of claim 40, wherein said product further comprises an additive selected from the group consisting of a vitamin, a mineral and a flavouring agent.
71. A coated food product comprising the food product of claim 40, wherein said food product is a solid matrix core, and wherein said coated food product further comprises a coating covering at least a part of said matrix core.
72. The food product of claim 71, wherein said coating is selected from the group consisting of chocolate, carob, peanut-based coating, cream-type coating, yogurt-type coating and a flavoured coating.
73. The food product of claim 72, wherein said coating is substantially free of simple sugar.
74. The coated food product of claim 71, wherein said product is in the form of a bar, and wherein said coating covers a part of a lower portion of said matrix core.



75. The coated food product of claim 71, wherein said product is in the form of a bar, and wherein said coating covers a part of an upper portion of said matrix core.
- 5 76. The coated food product of claim 71, wherein said coating covers substantially all of said matrix core.
77. The food product of claim 40, wherein said product is in the form of a solid matrix core and further comprises an edible layer portion situated above or below said matrix core,  
10 wherein said layer portion is substantially free of cereal like pieces.
78. A layered food product comprising the food product of claim 40, wherein said food product is in the form of a matrix core, wherein said layered food product comprises at least two of said matrix cores and an edible layer portion situated therebetween, wherein  
15 said layer portion occupies at least part of the interface between said matrix cores, and wherein said layer portion is substantially free of pieces of cereal-like core.
79. The food product of claim 77, wherein said layer portion comprises a water-based or fat-based composition selected from the group consisting of caramel, chocolate, peanut, and  
20 a flavoured confectionery material.
80. The food product of claim 77, wherein said layer portion is substantially free of simple sugar.
- 25 81. The food product of claim 40, wherein said food product has a water activity of 0.2 to 0.4.
82. A method for preparing a food product suitable for a controlled carbohydrate diet, said method comprising:  
30 (a) providing ingredients comprising at least 15% by weight of pieces of cereal-like core, wherein said ingredients collectively comprise less than 30% by weight of digestible carbohydrate;  
(b) providing a binding agent which is substantially free of simple sugars;

- (c) mixing said binding agent with with said ingredients thereby to obtain a moldable mass; and
- (d) forming said moldable mass into said food product.

5     83. The method of claim 82, wherein said moldable mass is formed into a form selected from the group consisting of a bar, a slab, a strip and a cluster.

84. The method of claim 83, further comprising cutting said strip transverse to its long axis thereby to obtain a bar.

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85. The method of claim 83, further comprising making a plurality of spaced apart first cuts in said slab thereby to obtain a strip, and cutting said strip at an axis transverse to said first cuts thereby to obtain a bar.

15     86. The method of claim 83, said method further comprising heating said binding agent prior to said mixing step (c).

87. The method of claim 86, wherein said binding agent is heated to at least 50°C.

20     88. The method of claim 87, wherein said binding agent is heated to at least 60°C.

89. The method of claim 88, wherein said binding agent is heated to at least 70°C.

25     90. The method of claim 82, wherein each of said pieces of cereal-like core has a median size of at least 2mm.

91. The method of claim 82, wherein said pieces of cereal-like core comprise pieces or nuggets derived from a source selected from the group consisting of grains, cereals, legumes, nuts, seeds, fruit, coconut, caramel and chocolate.

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92. The method of claim 82, wherein said pieces of cereal-like core comprise nuggets comprising less than 40% digestible carbohydrate.

93. The method of claim 92, wherein said nuggets comprise less than 25% digestible carbohydrate.

94. The method of claim 93, wherein said nuggets comprise less than 10% digestible carbohydrate.

95. The method of claim 82, wherein said pieces of cereal-like core comprise nuggets comprising more than 60% protein.

96. The method of claim 95, wherein said nuggets comprise more than 75% protein.

97. The method of claim 96, wherein said nuggets are soya nuggets.

98. The method of claim 82, wherein said digestible carbohydrate is selected from the group consisting of simple sugars, starch, and any carbohydrate which may be cleaved under physiological conditions to yield simple sugars.

99. The method of claim 82, wherein said food product comprises at least 20% by weight of said pieces of cereal-like core.

100. The method of claim 90, wherein said food product comprises at least 30% by weight of said pieces of cereal-like core.

101. The method of claim 100, wherein said food product comprises at least 40% by weight of said pieces of cereal-like core.

102. The method of claim 101, wherein said food product comprises at least 50% by weight of said pieces of cereal-like core.

103. The method of claim 102, wherein said food product comprises at least 60% by weight of said pieces of cereal-like core.

104. The method of claim 92, wherein said binding agent is a protein-based agent.

105. The method of claim 104, wherein said protein-based binding agent is hydrolyzed gelatin.

5 106. The method of claim 82, wherein said ingredients further comprise indigestible carbohydrate.

107. The method of claim 106, wherein said indigestible carbohydrate is selected from the group consisting of fiber, gum, cellulose, polydextrose, sugar alcohol, fructo-  
10 oligosaccharide, inulin, glycerin and fibersol.

108. The method of claim 82, wherein said ingredients further comprise an additive selected from the group consisting of a vitamin, a mineral and a flavouring agent.  
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109. The method of claim 82, further comprising applying a particulate additive to a surface of said slab, bar or cluster.

110. The method of claim 109, wherein said particulate additive is selected from  
20 the group consisting of nuts, chopped nuts, chocolate chips and chocolate chunks.

111. The method of claim 82, wherein said method further comprises applying a coating to at least a part of said product.

25 112. The food product of claim 111, wherein said coating is selected from the group consisting of chocolate, carob, peanut-based coating, cream-type coating, yogurt-type coating and a flavored coating.

113. The food product of claim 111, wherein said coating is substantially free of  
30 simple sugar.

114. The method of claim 111, wherein said method further comprises applying a coating to substantially all of said food product.

115. The method of claim 83, wherein said method further comprises applying an edible layer portion to said slab, and wherein said layer portion is substantially free of pieces of cereal-like core.

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116. The method of claim 83, wherein said method further comprises applying an edible layer portion between a plurality of said slabs, wherein said layer portion occupies at least part of the interface between said slabs thereby to obtained a layered slab, and wherein said layer portion is substantially free of pieces of cereal-like core.

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117. The method of claim 115, wherein said layer portion comprises a water-based or fat-based composition selected from the group consisting of caramel, chocolate, peanut, and a flavored confectionery material.

15 118. The food product of claim 115, wherein said layer portion is substantially free of simple sugar.

119. The method of claim 82, further comprising baking said food product.

20 120. A food product suitable for a controlled carbohydrate diet produced by the method of claim 82.

121. The food product of claim 120, wherein said product comprises less than or equal to 30% by weight of digestible carbohydrate and wherein said food product  
25 exhibits a texture profile having an average peak density of at least 1 peak per millimetre penetration depth when analyzed using a *TA.XT Plus* texture analyzer machine following either a 45 degree chisel blade test.

122. The food product of claim 120, wherein said product comprises less than or  
30 equal to 30% by weight of digestible carbohydrate and wherein said food product exhibits a texture profile having a global maximum at a first depth of penetration and a plurality of isolated local maxima at a respective plurality of second depths of

penetration when analyzed using a *TA.XT Plus* texture analyzer machine following either a 45 degree chisel blade test.

123. The food product of claim 122, wherein said at least one of said second  
5 depths of penetration is less than said first depth of penetration.

124. The food product of claim 122, wherein said at least one of said second  
depths of penetration is greater than said first depth of penetration.

10 125. The food product of claim 123, wherein said at least one of said second  
depths of penetration is greater than said first depth of penetration.

126. The food product of claim 122, wherein said plurality of said second depths  
of penetration are less than said first depth of penetration.

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127. The food product of claim 122, wherein said plurality of said second depths  
of penetration are greater than said first depth of penetration.

128. The food product of claim 126, wherein said plurality of said second depths  
20 of penetration are greater than said first depth of penetration.

129. The food product of claim 120, comprising at most 30% by weight of  
digestible carbohydrate, said food product having a thickness and exhibiting a texture  
profile of force versus depth of penetration when analyzed using a *TA.XT Plus* texture  
25 analyzer machine following either a 45 degree chisel blade test, wherein said texture  
profile is characterized by:  
(a) a global maximum force at a first depth of penetration;  
(b) a global width equal to the difference between a second depth of penetration and a  
third depth of penetration, the second depth of penetration being less than the first  
30 depth of penetration, the third depth of penetration being greater than the first depth  
of penetration, the second and third depths of penetration corresponding to  
respective points on said profile where the force is equal to 50% of said global

maximum force, said global width being at least 80% of the thickness of the food product; and

- (c) a plurality of local peaks appearing in a density of at least one per millimeter penetration depth, each local peak characterized by a respective fourth depth of penetration at which the force exhibits a local maximum and a respective fifth depth of penetration at which the force exhibits a local minimum, wherein the difference between the respective fourth and fifth depths of penetration is between 1% to 25% of said global width, wherein each local peak is further characterized by a respective local amplitude equal to the difference between the force at the respective fourth depth of penetration and the force at the respective fifth depth of penetration, the respective local amplitude being at least 1% of said global maximum force.

130. A method of providing nutritional support to a subject comprising orally administering to said subject the food product of claim 1.

131. The method of claim 130, wherein said method is part of a controlled carbohydrate diet being followed by said subject.

132. The method of claim 130, wherein said subject suffers from a condition associated with defective blood glucose homeostasis.

133. The method of claim 132, wherein said condition is selected from the group consisting of obesity, hyperglycemia, insulin resistance, type I diabetes and type II diabetes.

134. A commercial package comprising the food product of claim 1.

135. The commercial package of claim 134, wherein said package further comprises an indication that the food product is suitable for a low carbohydrate diet.

136. The commercial package of claim 134, wherein said package further comprises an indication that said product is suitable for consumption at breakfast.